Resource Recycling Systems

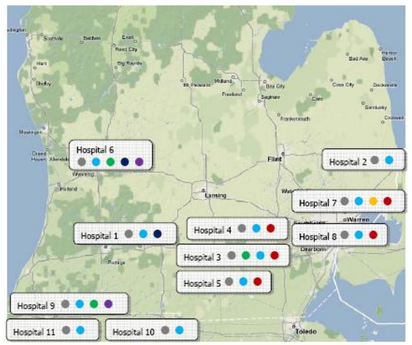
Sustainable Systems for a Waste-Free Future

Containing Health Care Waste Costs: The Resource Management Approach

Overview

Resource Recycling Systems operates the Waste and Recycling Management Program at 11 campuses of a large health system in Michigan and northern Indiana. This case study shows how we have been able to increase recycling levels while simultaneously providing financial savings to the health system. This approach allows for the health systems to provide greater benefit to the communities that they serve by reducing the operational cost of healthcare delivered and reducing pollution that leads to adverse health effects among vulnerable citizens. Comprehensive auditing allows for rigorous evaluation of the environmental and financial benefits of recycling services.

Recovering Resources



RRS Waste and Recycling Programs
Waste
Recycling:
Cardboard
Bottles, Cans, and/or Mixed Plastics
Scrap Metal
Paper:
Confidential Recycling – All Paper Recycled in Confidential Manner
Office Paper Recycling – Non-Confidential Documents Only
Confidential Document Destruction – Confidential Documents Only

Recyclable materials such as paper, cardboard, and plastic typically make up at least 50% of a hospital's waste stream. Our challenge is to capture this potential recyclable volume in the hospital setting, while avoiding contamination of recyclables or improper handling of regulated wastes. RRS coordinates a variety of recycling programs throughout the health system:

- Cardboard – 11 programs
  - Up to 20% of waste stream
  - Easy to capture from shipping/receiving areas
- Paper – 6 programs
  - Can be recycled through confidential document programs or separately
- Bottles and Cans – 3 programs
  - Collected from kitchen and/or public areas of hospital
  - Bottles with deposits collected outside of RRS program
- Scrap Metal – 1 program
  - High value material generated in construction and renovation projects
- Mixed Plastics – 2 programs
  - Can be captured from food service, linen and EVS; also from labs and ORs
  - Different recyclers accept different plastics – RRS uses photos and samples to verify acceptability prior to initiating a program

Program Examples

Mixed paper recycling

OR plastic recycling

Measuring Performance

Tracking Data

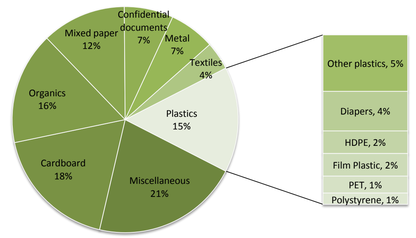
RRS monitors waste data from vendor invoices in a "scorecard" format for each location in the program, measuring equipment efficiency and recycling rates. This allows hospitals in the program to view their entire waste stream at a glance, and track the effects of construction projects, new programs, and changing levels of patient activity. To compare data from different vendors, all items from the invoices are converted into a common baseline – tons of material sent to the landfill, recycled, or shredded.

Data tracking is also used to audit existing programs and assess the potential costs and benefits of a new program. Through a waste audit, we can determine sources, contents, and volumes of a waste stream; identify sources of prohibited items; and estimate costs or savings from diverting the waste or using alternate disposal methods.

How-To: Comparing Waste Streams

- Compactors and open top containers: record weight in tons from invoice
- Dumpsters: Estimate weight in tons based on dumpster size and pickup frequency. Weight = Dumpster size (CY) × Material density (lb/CY) ÷ 2000 lb/ton × % Full (based on observation) × Pickups in month
- Carts, bags, boxes, and consoles: Estimate weight in tons based on volume and pickup frequency. Weight = Cart volume (Gallons) ÷ 202 Gal/CY × Material density (lb/CY) ÷ 2000 lb/ton × % Full (based on observation or vendor reports) × # Picked up in month

Typical Hospital General Waste Characterization by Weight



Sample Waste Stream Audit – Food Waste

Hospital Name:
Cafeteria/Restaurant Name:
Address:

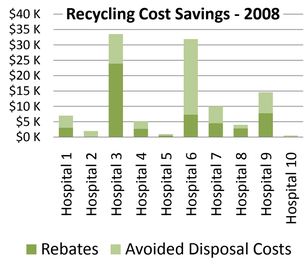
Contact Person:
Phone:
Email:

Audit Start Date:
Audit End Date:

Date	Time In	Source	No. of Food Containers Used (Y/N)?	Gross Weight (lbs)	Tare Weight (lbs)	Non-Compostable Item Weight (lbs)	Net Weight (lbs)	Plastic	Metal	Other Trash	Cardboard	Wet Cardboard	Paper	Compostable Paper Items	Notes
4/22/2010	8:45 AM	Salad Prep Station	Pre	200	50	10	140	plastic wrap	2 cans	1 band-aid	1 box	none	napkins	3 cups	——— Example ———
							0								
							0								
							0								
							0								

Financial Performance

RRS' recycling programs produce financial savings in two ways. First, many of the locations receive per-ton rebates on recycled materials. Second, all recycled material would otherwise have to be sent to a landfill at a per-ton cost to the site – costs that are avoided by recycling the material. In 2008 alone, the health system's recycling programs have saved a total of over $109,000.

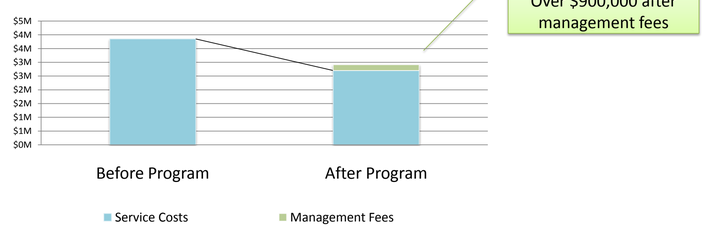


Saving Money

Through the Waste and Recycling Management Program, RRS provides contract management services for waste and recycling at 11 health system locations, coordinating pickup, transport and recycling/ disposal.

- RRS negotiated pricing with substantial cost savings for the system through a bundled contract bid process.
- RRS provides consolidated invoicing, contract enforcement, and dedicated customer service.
- Services include monitoring the cost and performance of all recycling and waste service providers, targeting cardboard, confidential documents, paper, bottles and cans, scrap metal, mixed plastics, solid waste and other materials as needed.

Waste and Recycling Management Program Cost Savings, 2006-2009



Program savings: 24% - Over $900,000 after management fees

Program Mission and Goals

RRS' comprehensive waste stream management services ensure proper disposal of your general, regulated medical, universal and hazardous wastes from the point of generation to the point of final disposal. In addition to waste stream management, we also offer the following services to our health care clients.

- **Sustainability Planning** – We help integrate and make sustainable change measureable within your facility with our recycling and waste reduction management, environmental purchasing, sustainable building design, carbon footprint, energy planning and facility management services.
- **Compliance Monitoring** – Our compliance monitoring program serves as a proactive system for preventing, detecting and responding to activities inconsistent with established accreditation, compliance or regulation guidelines.
- **Resource Management** – RRS offers an onsite resource management team that works to aid sustainability efforts while continually monitoring performance, compliance and safety on a day-to-day basis.
- **Contract Management** – We monitor the cost and performance of all recycling and waste subcontractors, giving you confidence that your institution is optimizing collection service and minimizing overhead costs.

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